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# Modernized During the Synthesis of E-466 Made on the Basis of Local Raw Materials - Composite From Silver Ion Brands Application in Several Industrial Networks of Domestic Chemistry.

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**Abstract:** modified during the synthesis of E-466, obtained on the basis of local raw materials - composite silver ionic brands, applied in several existing branches of household chemistry, research has been conducted and positive results have been achieved. In particular, this research was conducted on the simplification of the composition of laundry detergents as harmless as possible, at least partially free from various carcinogenic effects, as well as the exchange of local reagents, achieving environmental purity - in-depth analysis.

**Keywords:** Banana cellulose, extraction process, basic substance content, cotton lint, polymerization rate, pentosan, alkali sediment, suffocation, ash content, moisture, cellulose, concentration, parameter, optimal conditions, destruction.

**Processes of studying the composition of composite compounds in household detergents and the study of cellulose esters in this composition.** A quality detergent is a guarantee of cleanliness. The detergent should make the smell and quality of the fabric being washed as desired. Due to the negligence of the user, the washing machine can sometimes affect the health of the washer. The choice depending on the type of washing powder is not yet formed in most cases. Universal detergents can be used to wash any type of fabric and wool products, both in the washing machine and by hand. They also remove various dirt, stains and small stains on the fabric [1-12]. That is why the name “universal” is indicated on the powder container, which is one step higher than other types. Laundry detergent with the name "bio" on the label is considered a little stronger and helps to remove stains from sauces, coffee, tea, fruits and grease. "Automatic" - has a special bleach, but this type, which has a lower foaming property than other types, is mainly designed for washing machines [13-30]. It is better not to wash brightly colored fine silk fabrics and cotton fabrics in such a powder. Synthetic and thick fabrics can be washed in powders recommended for washing in cold water. If

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you want to wash in the washing machine, you do not need to heat the water. The packaging of such detergents will state that the water temperature should not exceed 60 degrees. Bio supplements are enzymes that are compatible with nature. Enzymes, in turn, have the ability to disperse various stains and eliminate complications caused by food and drink. Bio additives are exposed to 60 degrees, decomposing at higher temperatures. With the addition of powder and bio, you can wash everything except natural silk, wool, as well as fabrics made from other natural fibers. The more complex the composition of laundry detergent, the more difficult it is to know its effects on human health. In most cases, the harmful chemicals in the engine remain on the surface of the container, enter the human body with food and cause a number of serious diseases. Dishwashing detergents are called surfactants in the language of chemists, they are divided into cationic, anionic, amphoteric, neonogenic larvae. These chemical compounds are much harder to wash off from the surface of the dish.






When the dish is washed with washing gel, water droplets contain the active ingredients of the dissolved surface. When the water dries, these substances cover the surface of the container. When hot food is placed in a bowl, the active ingredients of the surface are added to our food and enter the body along with the food.

Most of the world's population suffers from various allergic diseases. Many explain this by the deterioration of the environmental situation, 70 percent of whom do not know that allergies and other diseases are the result of the use of chemical dishwashing detergents in the kitchen. Often the onset of the disease manifests itself as an allergic reaction, ending with cancer of the gastrointestinal tract, hypertension, depression.

Of the chemicals listed above, chlorine is the safest for nature. It is broken down into components that are safe in nature. Chlorine and its organic compounds adversely affect humans, causing cardiovascular disease, atherosclerosis, anemia, hypertension. The active ingredients of the surface are carcinogenic [31-38]. They absorb the protective layer of the stomach. The compounds are absorbed into the bloodstream and gradually poison the whole organism. Not only active ingredients, but also fragrances and preservatives that are part of the dishwashing detergent have a negative effect on the human body. Wastewater, which contains dishwashing detergent, also causes great harm to the environment. When wastewater enters a body of water, it causes them to become swampy, killing animals and plants. If the dishwashing detergent contains anionic surfactants, they are almost indestructible and cause three times more damage to the human body and the environment than others. Today, a number of foreign countries have strict requirements for chemical

dishwashing detergents. For example, in the European Union, in accordance with EU Regulation № 259/2012, the labels of dishwashing detergents must contain full information about the product and its composition. In addition, a few ingredients should be listed regardless of their concentration. For example, fragrances. The provisions of the Technical Regulation adopted in Russia in 2010 do not require a complete list of detergent ingredients. Manufacturers who use it effectively often "forget" the most toxic and toxic substances. In the United States, the sale of soaps and bath gels, along with chemical detergents labeled "antibacterial", is on the verge of being banned. Many years of research have found 19 components in their composition that are dangerous to human health. The most important of these are triclocarbons and triclosan, which have so far been thought to kill viral and other disease-causing microorganisms. The ability of antimicrobial triclosan to cause liver cirrhosis and fibrosis has recently been established. According to Janet Woodock, head of the Expert Center, the negative effects of triclosan on human health have been fully established. First and foremost, the detergent must be safe for human health.

The above are the current events and the detergents are as harmless as possible, taking into account the negative consequences arising from them. This research was carried out on the simplification of the composition, albeit partially free from various carcinogenic effects, as well as the exchange through local reagents, to achieve environmental purity - in-depth analysis. The following is a composite composition of washing powder obtained on the basis of local raw materials, according to which the composition of the composite has a high degree of exchange of the drug E-466 and a brand with a high base content and high viscosity was used:

**Consumption rate of reagents for laundry detergent based on the ingredients available and recommended in production**

**TABLE-1**

| № | Chemical reagents | Available content, consumption of reagents - norm, kg | Consumption of the proposed content - norm, kg |
|---|---|---|---|
| 1 | $Na_2CO_3$ | 20,2 | 28,8 |
| 2 | $Na_2SO_4$ | 12,2 | 8,4 |
| 3 | $Na_2PO_4$ | 4,6 | 4,2 |
| 4 | LAS-80 | 7,25 | 5,4 |
| 5 | $Na_2SiO_3$ | 1,8 | - |
| 6 | NaCl | 0,5 | - |
| 7 | Na-KMTs | 0,450 | 0,280 (E-466) |
| 8 | $H_2O$ | 2,6 | 2,4 |
| 9 | Glycerin | 1,4 | 0,5 |
| | Total | 50,0 | 50,0 |

It can be seen from the table that due to the reduction of sharp consumption norms of the existing content in production, as well as the addition of an innovative product - E-466 to the new composition, under its influence, the clothes being washed are transparent and it became clear that I was achieving a positive result in mussafo. That is, aqueous solutions of simple esters of cellulose (Na-KMTs, E-466) are able to

significantly increase the viscosity (viscosity) of latexes and various oils. When Na-KMTs, a simple ester of up to 25% cellulose, are added to E-466, the cleaning effect of the corresponding detergents is so improved that it is equivalent to natural soap. The inclusion of the synthesized E-466 innovative product in the composition on the basis of strictly structured consumption norms gave the above positive conclusions.

**Study of silver ion E-466 as a reagent stabilizing the composition of washing powder and its role in the composite composition.** Antibacterial, disinfectant washing powder is used both in laundry and at home. Instead of strong substances, silver ionic washing powder is a safe and very effective antibacterial detergent. The detrimental effects of silver ions, as well as its beneficial properties have long been scientifically proven, that is, the bactericidal, antiviral, antifungal, disinfectant properties of silver ions are incomparable.

Even small concentrations of silver ions in washing powder are able to destroy various harmful cell membranes.

The advantages of silver ion detergent are as follows the disinfectant effect of silver is 3.5 times higher than that of sodium hydrochloride, silver does not form toxic compounds and has no odor. Silver ions affect more than 350 species of bacteria.

**A study of the use of modified silver ion E-466 brands in the composition of laundry detergent in the fight against various bacteria and viruses and the proposal of positive results.**

Taking into account the above, during the dissertation research it was recommended to produce an innovative composite product with a new content of washing powder consumption - the norm. The difference between this composition and existing analogues is that the silver ion was initially synthesized on the basis of local raw materials, i.e. as a result of the interaction of silver fragments with the mineral acid - $HNO_3$. The silver ion in the resulting acid medium was neutralized and dried using special filters and incorporated into the composite during the synthesis of Na-KMTs.

Resistant to silver acid. Chloride, dilute sulfuric acid and "aqua regia" do not affect this, because on the surface of the metal formed a protective film of silver chloride (AgCl). Silver dissolves well in nitric acid and soluble sodium nitrate ($AgNO_3$) is formed:

$$\mathbf{Ag + 2HNO_3 = AgNO_3 + NO_2 + H_2O}$$

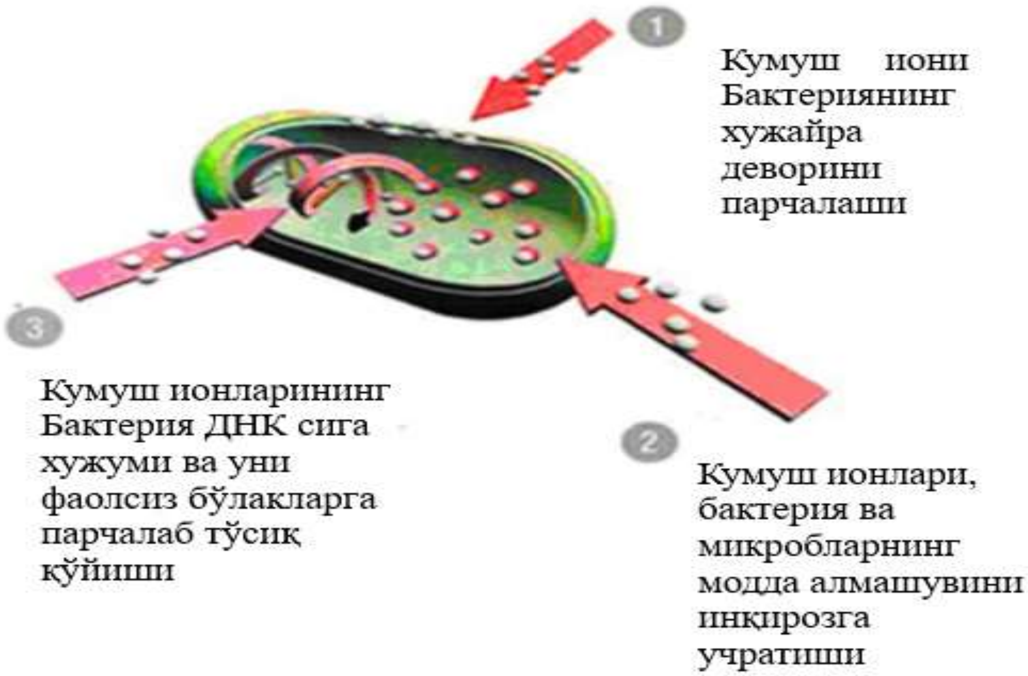
Hot concentrated sulfate acid of silver dissolves to form silver sulfate (Ag2SO4). Silver sulfate has a water solubility of 20 ° C and a weight of 0.79%. A clear bactericidal effect of silver ions above 150 micro g/l, i.e. the ability to clearly kill certain bacteria, is observed. At a concentration of 50-100 microg / l, silver ions have a bactericidal effect i.e. the ability to block the growth and proliferation of bacteria. It is important to note that Bacteriostasis is a reversible process and the influencing factor can grow and multiply once it is over. Only cases of long-term bacteriostatic effect are excluded. The main conclusion is that silver in 50 microg/l of water has the best bacteriostatic effect at the concentrations allowed by the current standards - SanPin, i.e. it can dramatically slow down bacterial growth.

In the dissertation research, the consumption of E-466 and silver ion, which are included in the composition of laundry detergent with a new consumption rate, was determined as a result of many repeated studies and recommended for production. Addition of Na-KMTs in the binding of silver ions in the localization process following the mercerization process, as well as the addition of various reagents in the exchange process and the direct involvement of cellulose with functional groups at the level of possible

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exchange in hydroxy groups and was used as a key raw material in the synthesis of several brands of E-466, an innovative product as a result of extraction using ethyl alcohol - an organic compound with an important composite content and several types of products based on it.

The following is an indication of how the silver ion works:




In conclusion, it should be noted that E-466 modified during the synthesis of E-466 obtained on the basis of local raw materials - composite silver ion brands, has been studied for application in several existing branches of household chemistry and achieved positive results. In particular, this research was conducted on the simplification of the composition of laundry detergents as harmless as possible, at least partially free from various carcinogenic effects, as well as the exchange of local reagents, achieving environmental purity - in-depth analysis. The following is a composite composition of washing powder obtained on the basis of local raw materials, according to which the composition of the composite has a high degree of exchangeability of the drug E-466 and a brand with a high base substance content and high viscosity was used. Available in production on this basis and reagents for laundry detergent based on the proposed composition were developed and submitted for introduction separately for consumption.

In this chapter, the study of silver ion E-466 as a reagent for stabilizing the composition of laundry powder and its role in the composite composition was carried out, and significant positive results were obtained by incorporating silver ions into the synthesized drug E-466 on the basis of composite-modification. It is known that antibacterial, disinfectant washing powder is used both in laundry and at home. Instead of strong substances, silver ionic washing powder is a safe and very effective antibacterial detergent. The detoxifying effects of silver ions, as well as its beneficial properties have long been scientifically proven, i.e. the bactericidal, antiviral, antifungal, disinfectant properties of silver ions are incomparable.

**It should be noted that Bacteriostasis is a reversible process and after the end of the influencing factor, growth and reproduction are possible.** Only cases of long-term bacteriostatic effect are excluded. The main conclusion is that silver in 50 microg / l of water has the best bacteriostatic effect at permissible concentrations - SanPin, according to current standards, i.e. it can drastically slow down bacterial growth.

In the dissertation research, the consumption of E-466 and silver ion, which are included in the composition of laundry detergent with a new consumption rate, was determined as a result of many repeated studies and recommended for production. The addition of the Na-KMTs synthesis period in the binding of the silver ion to the consumption rate determined in the composite during the localization process following the mercerization process and the direct involvement of cellulose with various reagents and functional groups in the exchange process at the level of possible exchange in hydroxide groups, as well as in the synthesis of several brands of E-466, an innovative product by ethyl alcohol extraction - an important composite organic substance and was used as the main raw material in the synthesis of several types of products based on it.

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